Lower Salt Creek Watershed-based Planning

WELCOME!

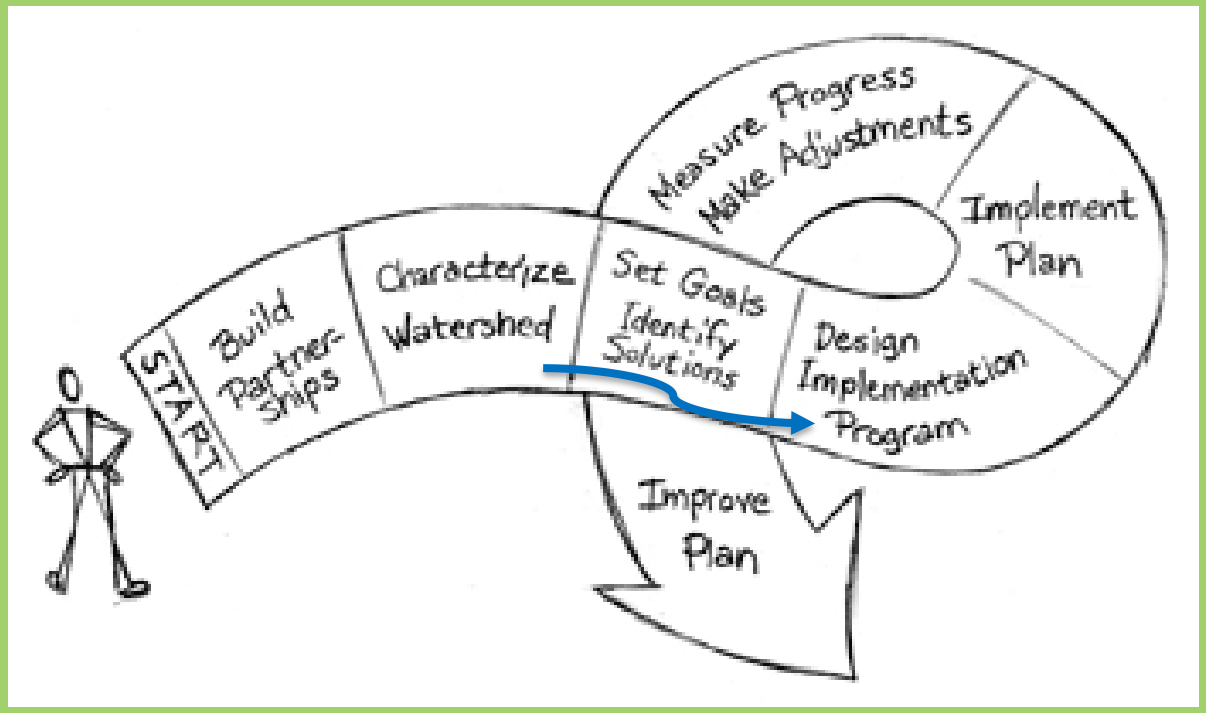
Village of Villa Park

August 10, 2017

Agenda

- Welcome and Introductions
- Local Spotlight
- June meeting: recap, questions
- Watershed Resource Inventory: update
- Problem Statement and Goals - updated
- Nonpoint Source Pollution Control BMP Projects
- Call for LSC Watershed Photos
- Next Meeting: Thursday, Oct.5, 1:00 p.m.
- Activities, News, Announcements

Watershed Planning Steps



From *Handbook for Developing Watershed Plans to Restore and Protect our Waters* (USEPA, 2005)

Watershed planning is an iterative and adaptive process…

Local Spotlight

- Villa Park's Water Quality / Green Infrastructure Projects

CMAP

Jeremie Lukowicz

August 10, 2017

Background

- Incorporated in 1915
- 17 miles from downtown
- Population around 22,000
- Over 98% developed
- Ovaltine
- 4 Railroads
  - Prairie Path
  - Great Western Trail

Prior Improvements

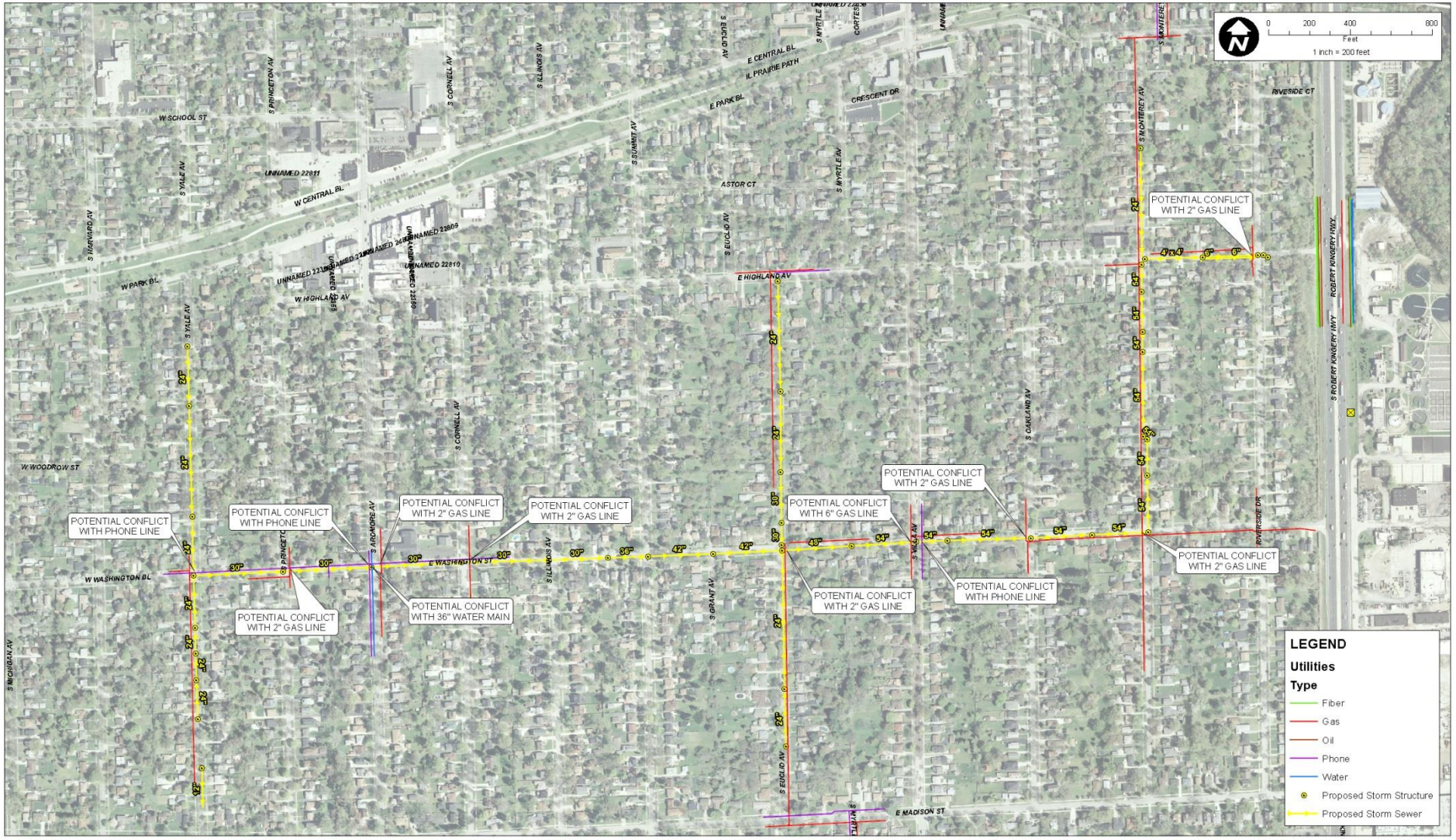
- DuPage County Stormwater Ordinance
  - Adopted in 1991
- Police Station
  - Built in 2004
  - Green Roof
  - Bioswales
- Village Vehicles
  - Old Police vehicles
  - New MPG friendly cars

Monterey Water Quality

- Unimproved Street
  - Poor drainage
  - New ditches
    - Still poor drainage
    - Difficult to mow
  - Native plantings
  - Amended soils

Washington Green Infrastructure Project

- What is it?
  - Combined Sewer Area
  - Flooding/Drainage Problems
  - Over $7 million to separate
    - If possible…
      - Flat
      - Conflicts
  - 3 Methods
    - Grant Street
    - 546 S. Euclid
    - East & West Washington



CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT:
VILLAGE OF VILLA PARK

NO.	DATE	NATURE OF REVISION

FILE NAME: Map Document: (N:\COMED\040532.0025R\GIS\BFE Exhibits\EXH 2 - Hydrologic Exhibit.mxd)
DATE -- TIME: 8/10/12

DSGN.:
DWN.: MJB
CHKD.: JMG
SCALE: 1"=
GIS USER:
CHKD.: MODEL: ArcGIS 9.2

TITLE:
WASHINGTON STREET
POTENTIAL UTILITY CONFLICT MAP

PROJ. NO.: 14-0092.00002
DATE:
SHEET 1 OF 1
DRAWING NO.:
EXH 2

Grant Street

- Current
  - No storm sewer
  - Poor pavement
  - Narrow road
- Proposed
  - Permeable pavers
  - Bioswales
  - Wider street

546 S. Euclid

- Current
  - Developed
  - Recurring flooding problems
- Proposed
  - Property buyout
  - Retention basin
  - Regrade to drain neighbors

East & West Washington

- Current
  - Flooding or drainage issues
- Proposed
  - Bioswales
    - Utility conflicts

Thank You

Watershed Resource Inventory: updates

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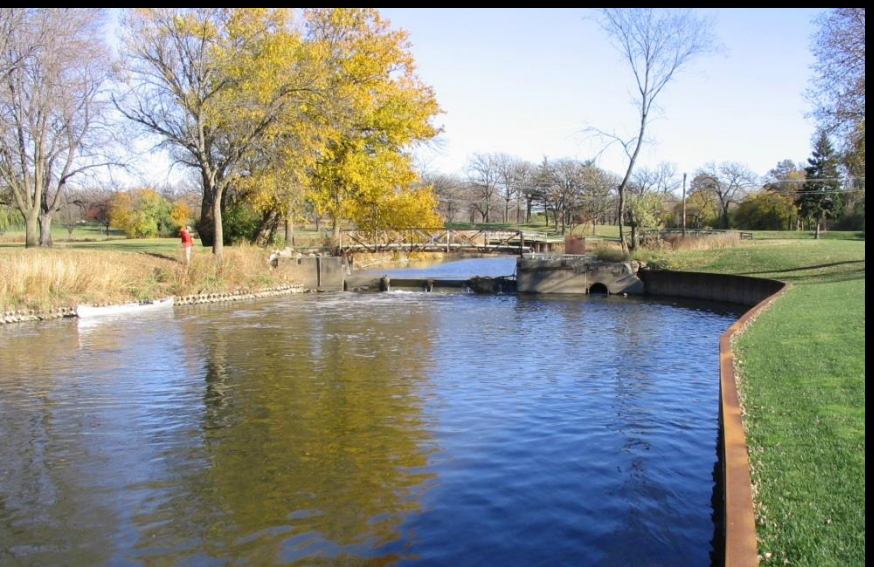
Salt Creek Restoration Project Update: The Preserve at Oak Meadows

- Deanna Doohaluk – The Conservation Foundation / DuPage River Salt Creek Workgroup

The Preserve
at Oak Meadows

Dam Removal and Bank Naturalization on Salt Creek



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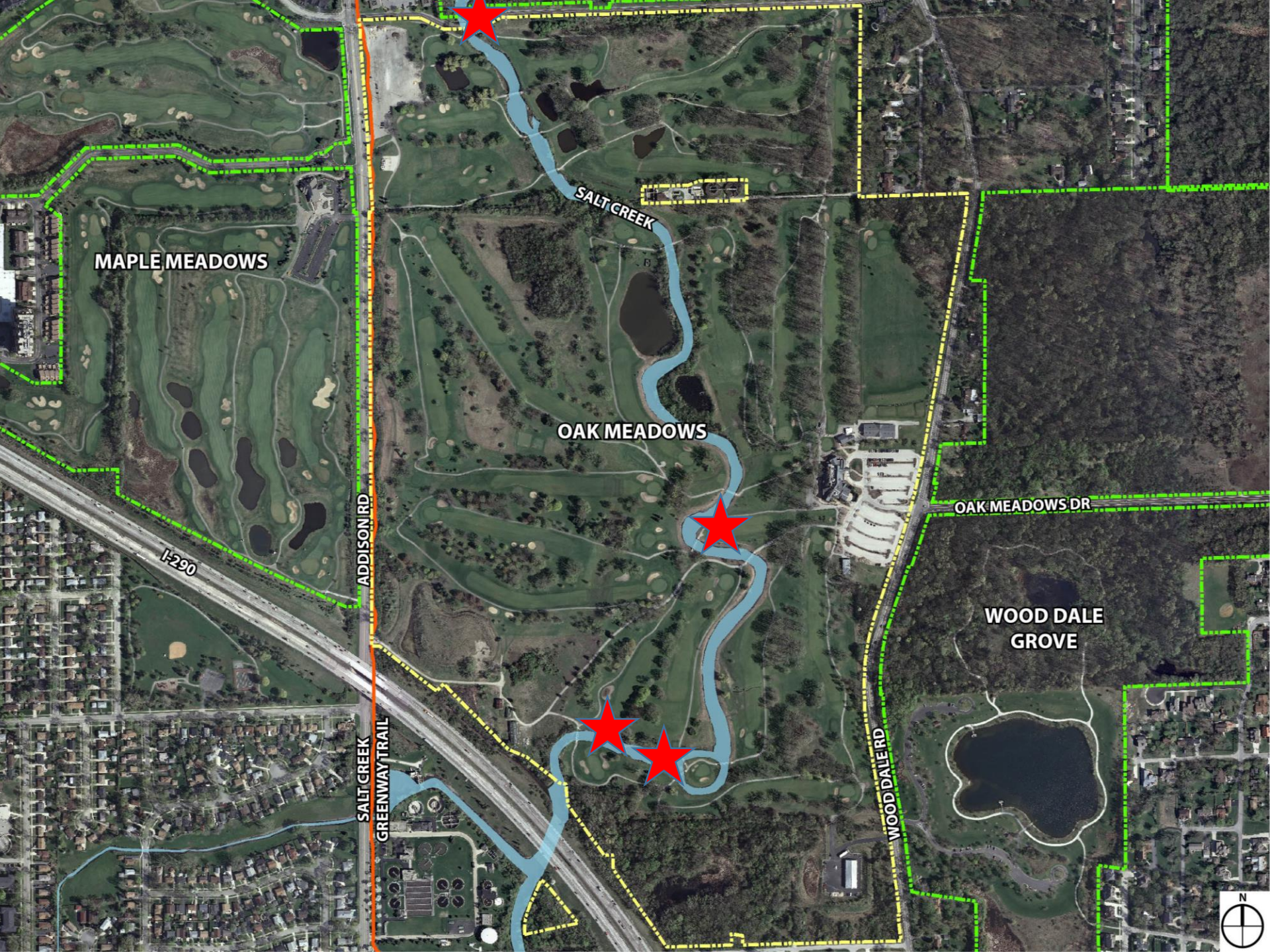
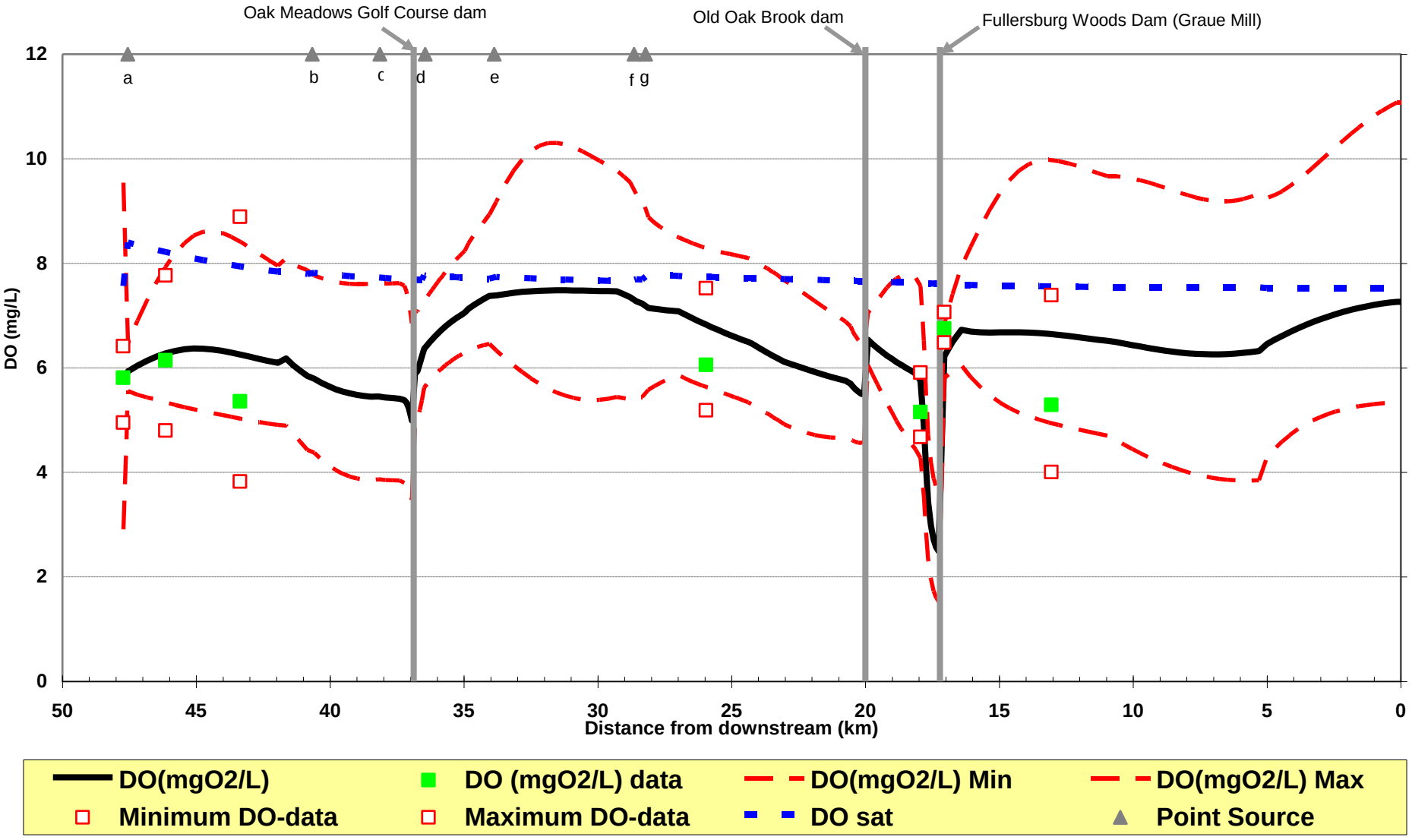
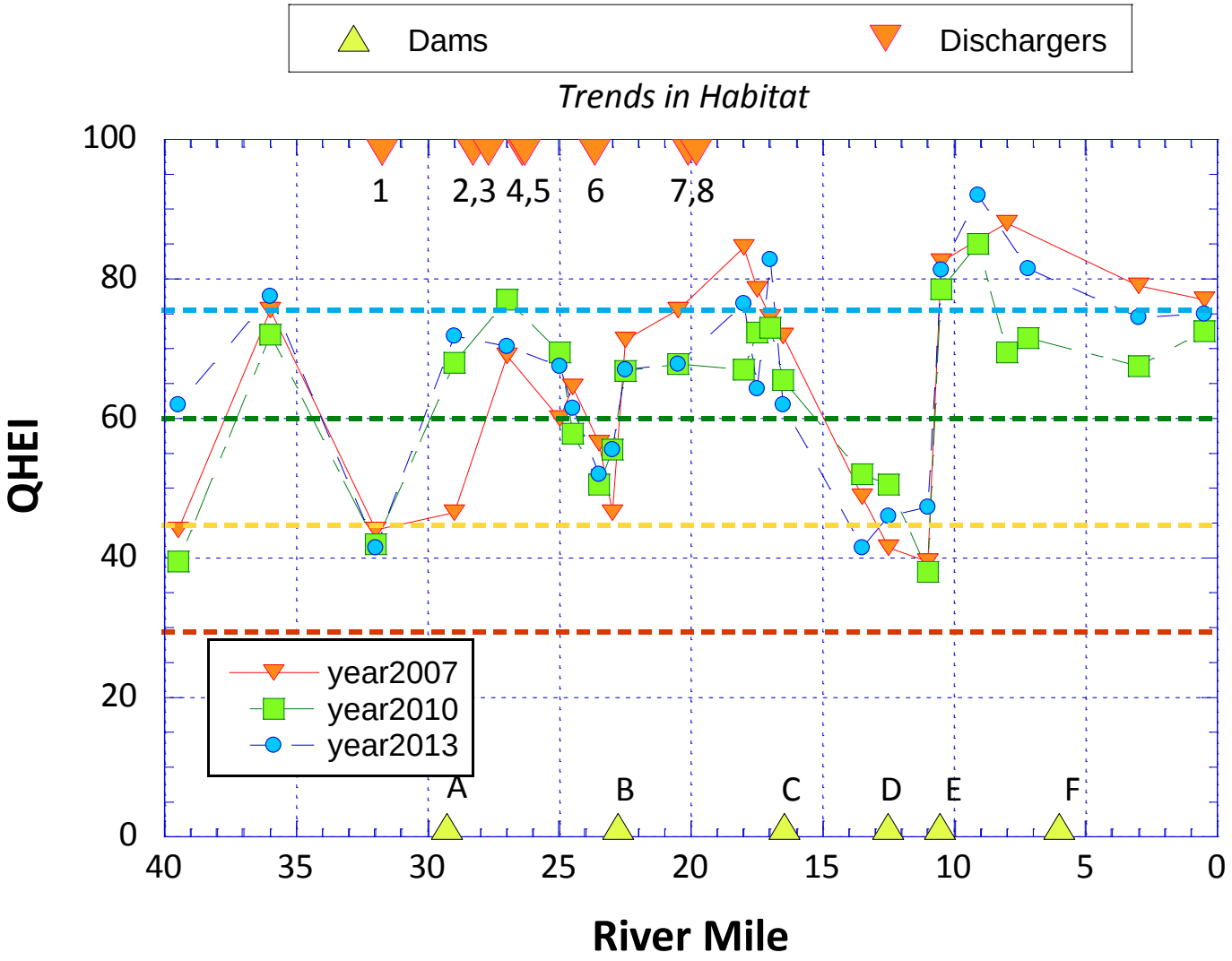

MAPLE MEADOWS
SALT CREEK
OAK MEADOWS
OAK MEADOWS DR
ADDISON RD
I-290
WOOD DALE GROVE
WOOD DALE RD
SALT CREEK GREENWAY TRAIL
N

Salt Creek (8/2/2007) Mainstem

Comparisons of Observed and Predicted Dissolved Oxygen: 2007 Calibration Run



QHEI in Salt Creek



Stream Enhancement Objectives

- Reduce Golf Course Flooding
- Improve Stream Habitat
  - Dam removal
  - Streambank naturalization
  - Sustainable rock substrate installation
  - Large wood installation
  - Backwater habitat creation
  - Floodplain connection

Stone Substrate

Large Wood

Backwater Habitat

Floodplain Connection

The Dam Pre-Construction

The Dam Post-Construction

The Island Pre-Construction


The Island Post-Construction


Streambanks Pre-Construction

Streambanks Post-Construction

Questions?

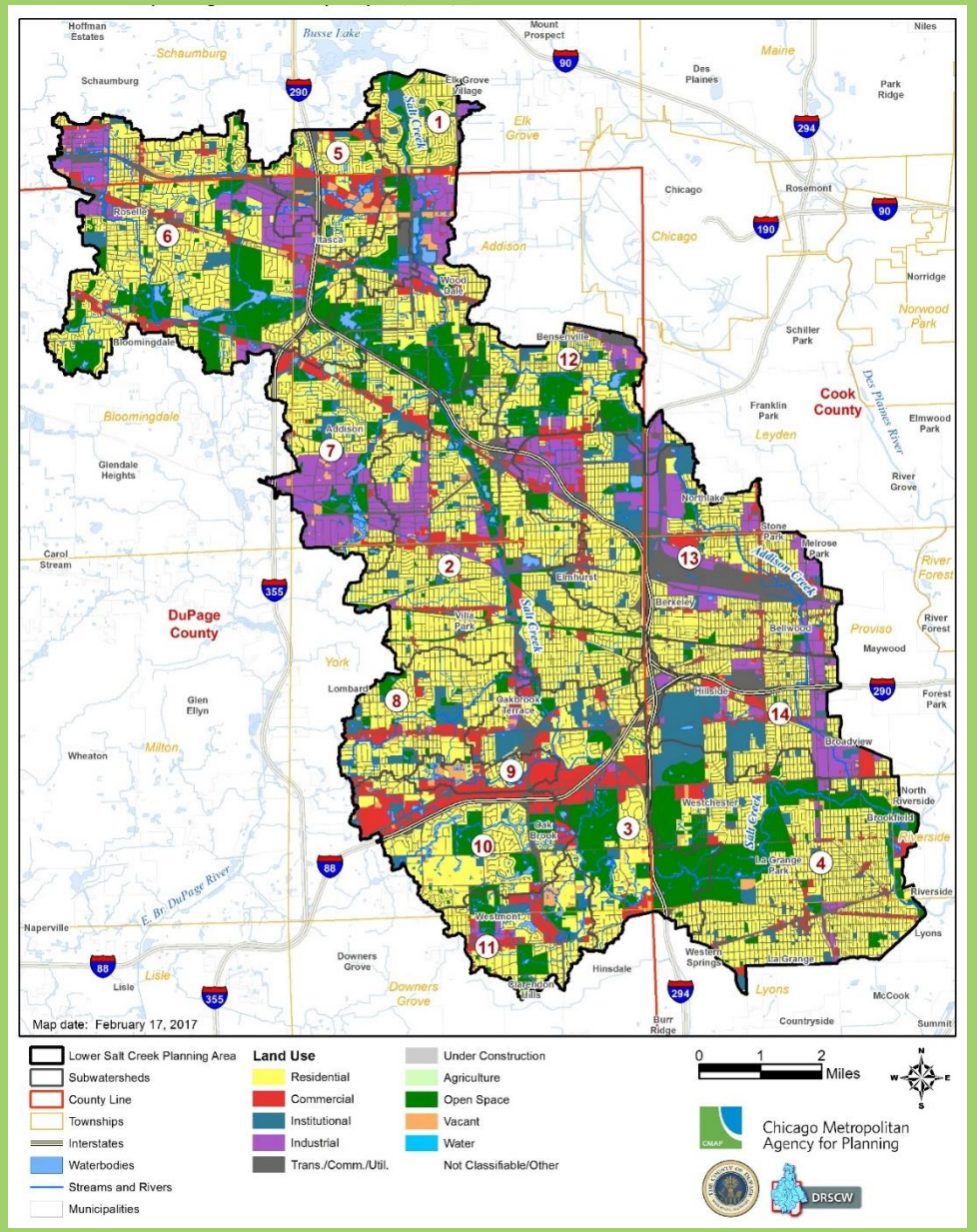
Pollutant Load Modeling

STEPL

- Spreadsheet Tool for Estimating Pollutant Loads
- EPA provided tool to model pollutants from different land uses and streambank erosion
- Compiled on a watershed/ subwatershed scale
- Also estimates potential reductions
- Limited to N, P, TSS, and BOD

LSC Land Use

Land Use Category	Area (acres)	Area (sq. miles)	Percent of Planning Area
Residential	24,492.4	38.27	38.01
Commercial	4,527.3	7.07	7.03
Institutional	3,736.3	5.84	5.80
Industrial	4,919.1	7.69	7.63
Open Space	9,937.1	15.53	15.42
Agriculture	29.5	0.05	0.05
T/C/U	15,379.8	24.03	23.87
Vacant	1,366.2	2.13	2.12
Under Construction	14.5	0.02	0.02
Unclassifiable/other	12.4	0.02	0.02
Water	18.3	0.03	0.03
Totals	64,432.9	100.7	100



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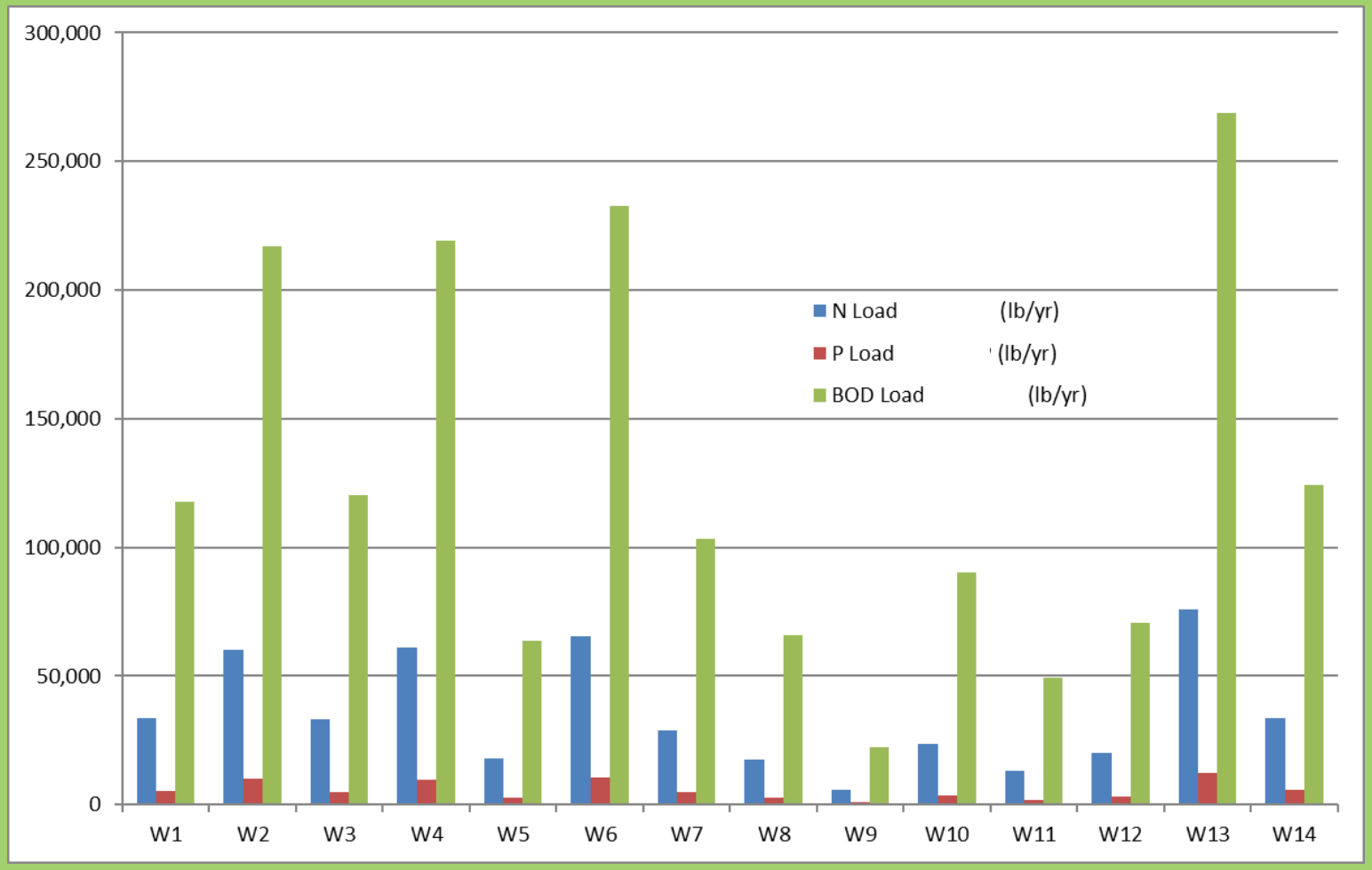
STEPL

*Average Annual **Total Nitrogen, Total Phosphorus, & BOD** Load (lb/yr) by Subwatershed*



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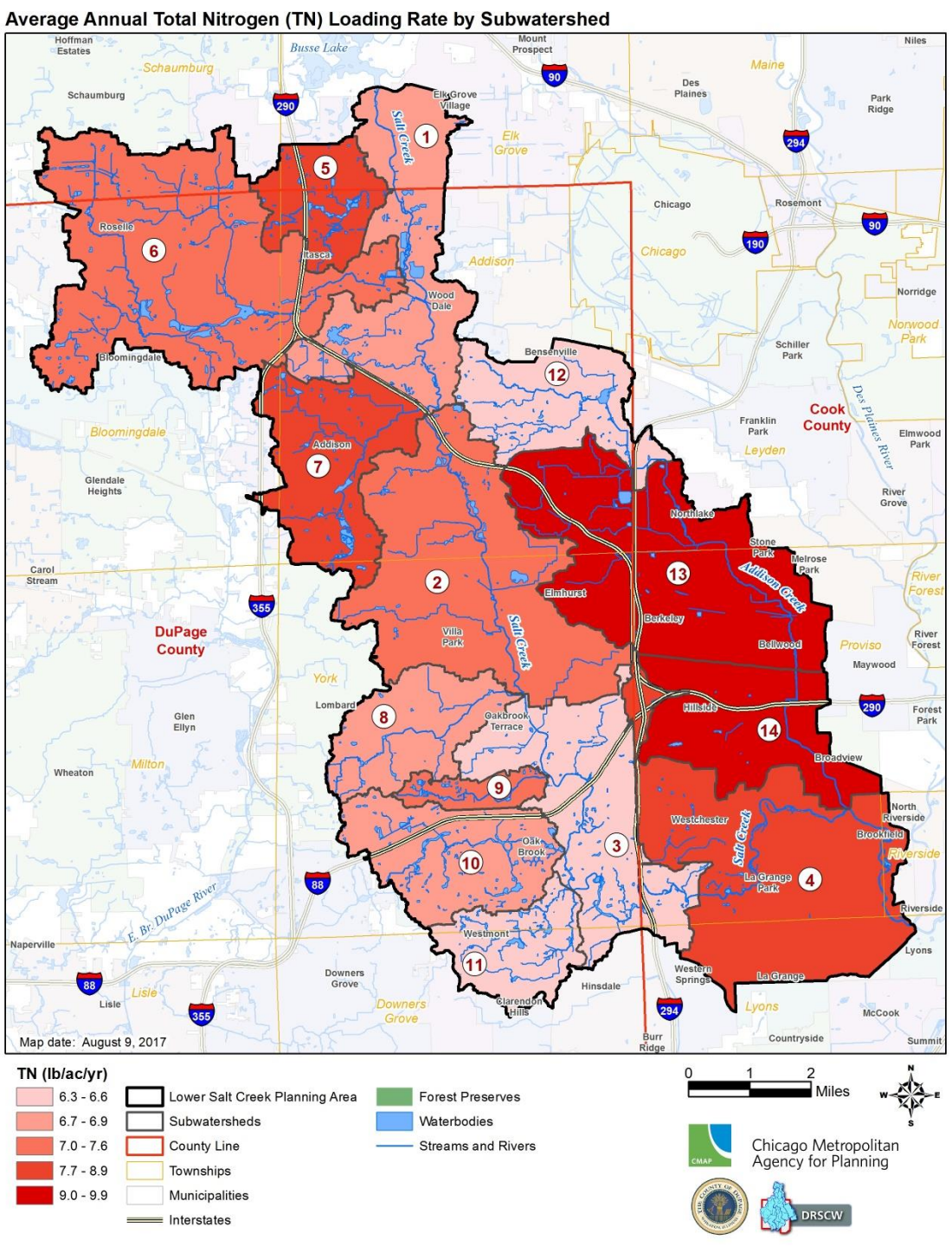
STEPL

Average Annual ***Total Nitrogen*** *(TN) Loading Rate by Subwatershed*

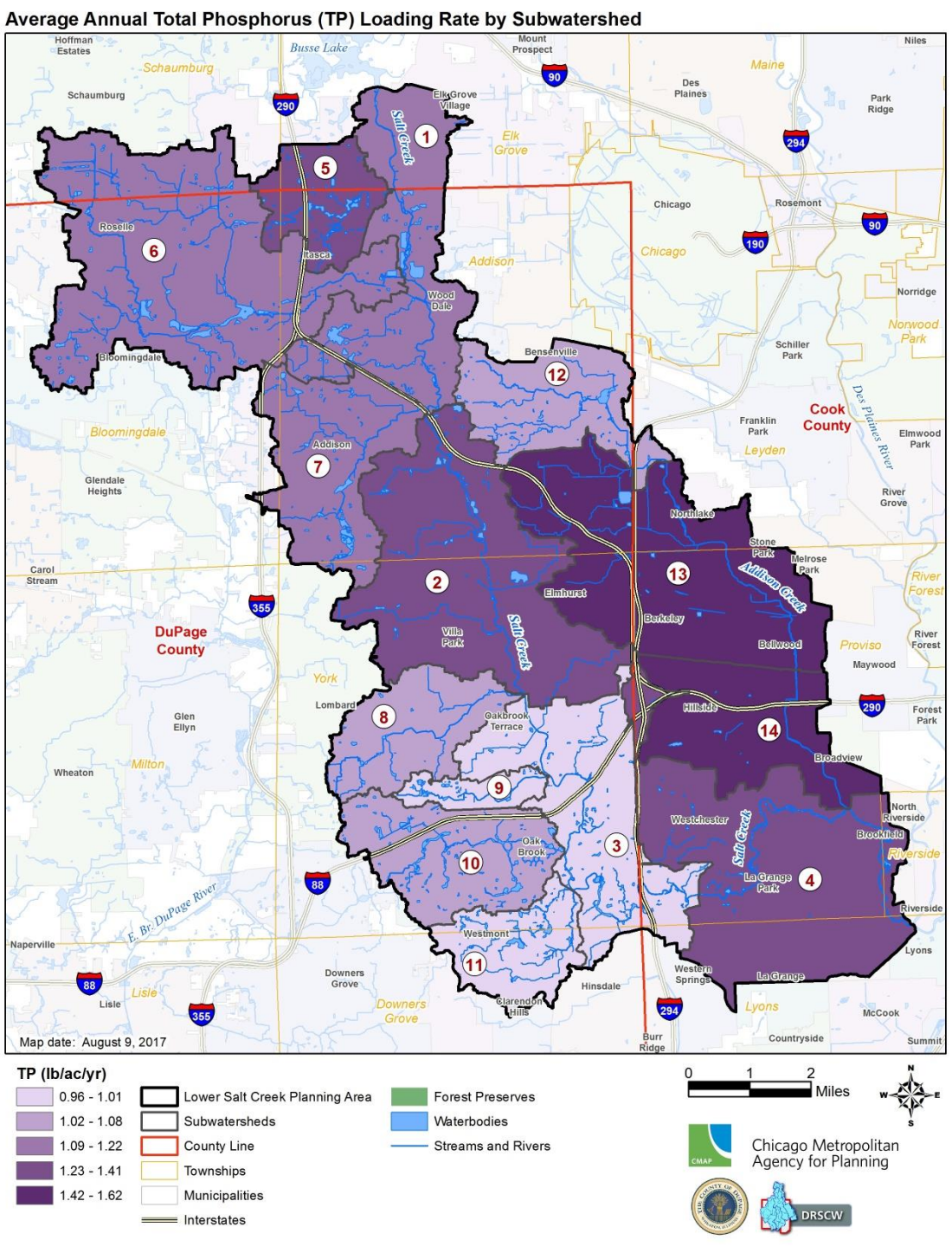
- Highest Rates:
  - Addison Creek Central (13)
  - Addison Creek South (14)



STEPL

Average Annual ***Total Phosphorus*** *(TP) Loading Rate by Subwatershed*

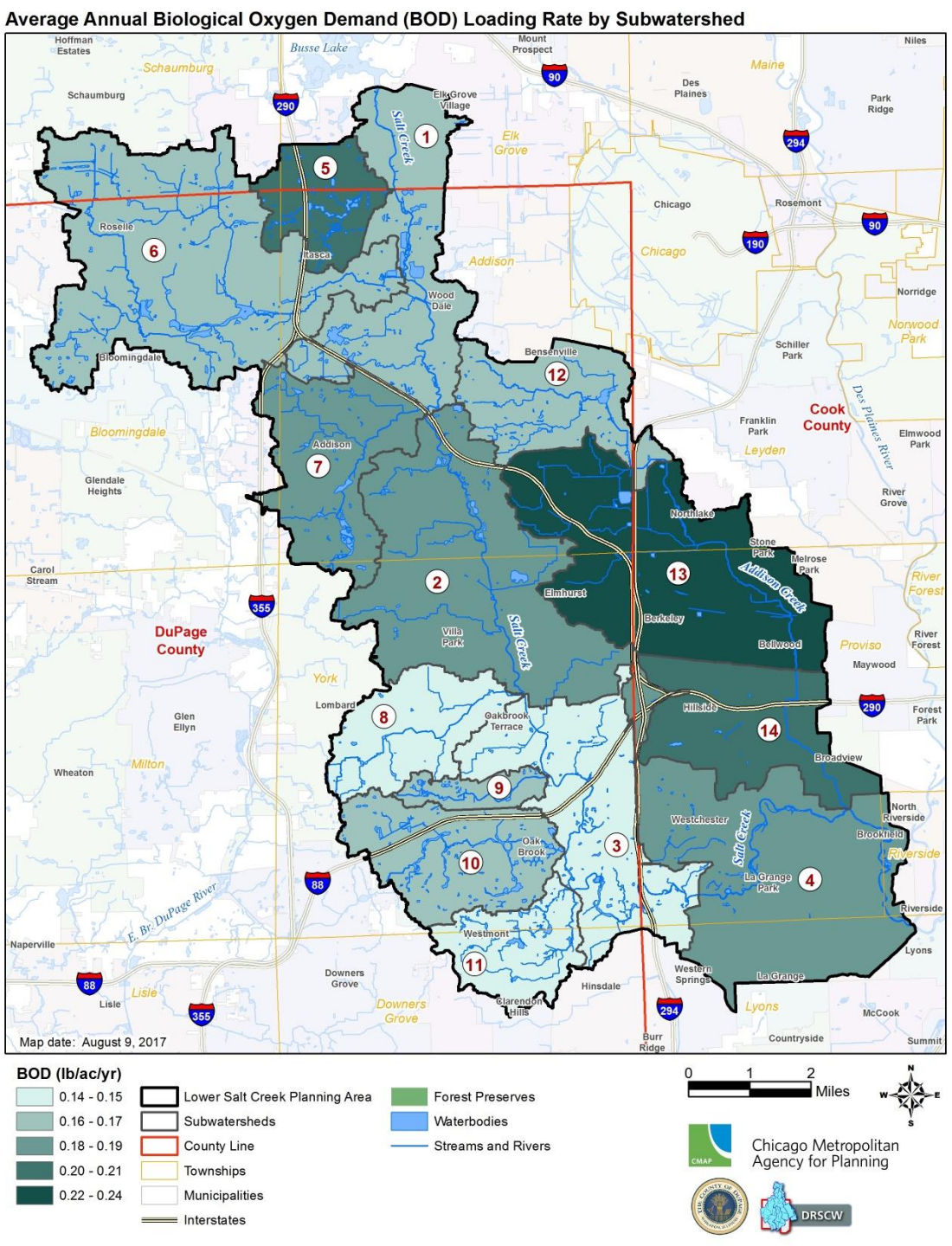
- Highest Rates:
  - Addison Creek Central (13)
  - Addison Creek South (14)



STEPL

Average Annual ***Biological Oxygen Demand (BOD)*** *Loading Rate by Subwatershed*

- Highest Rates:
  - Addison Creek Central (13)



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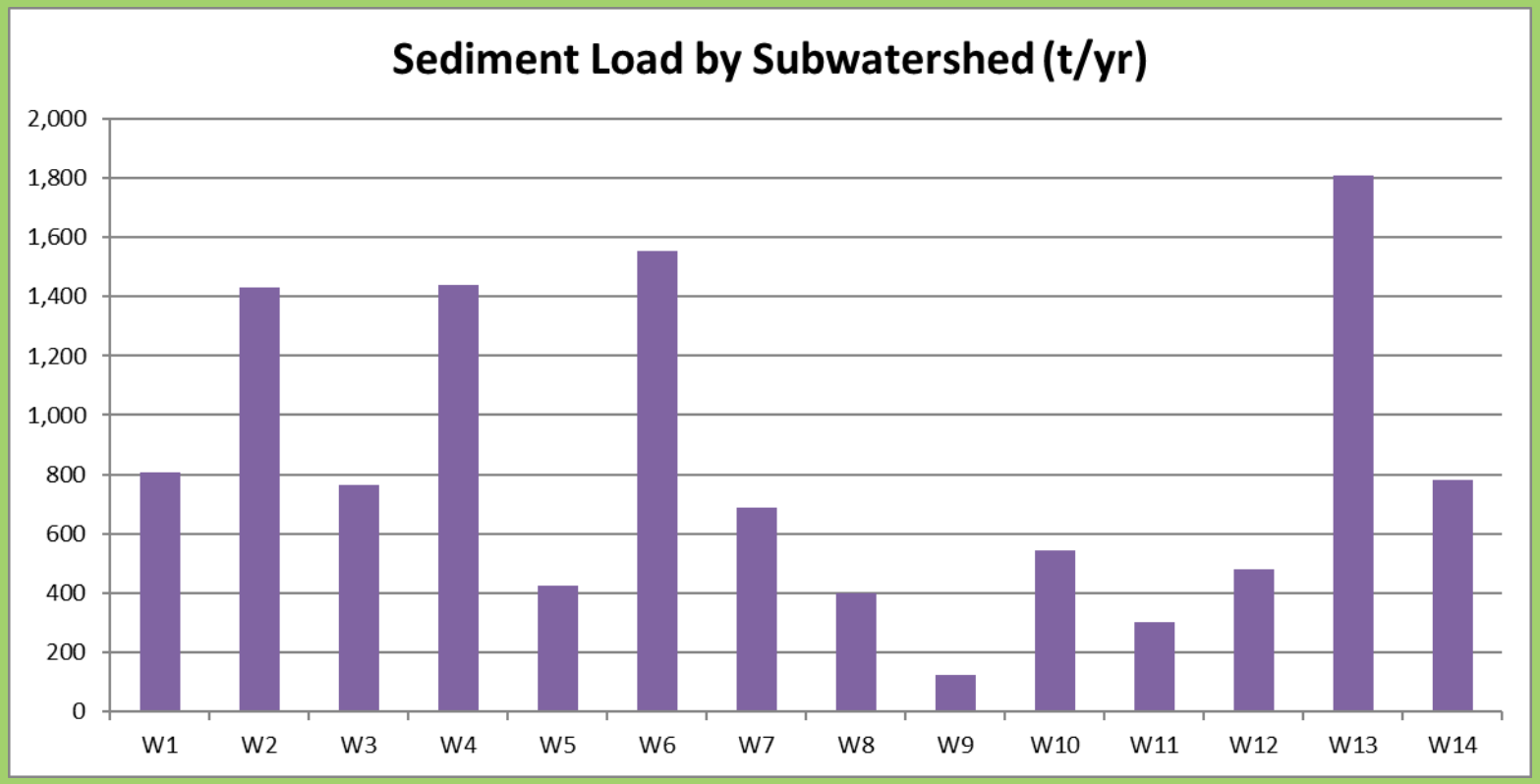
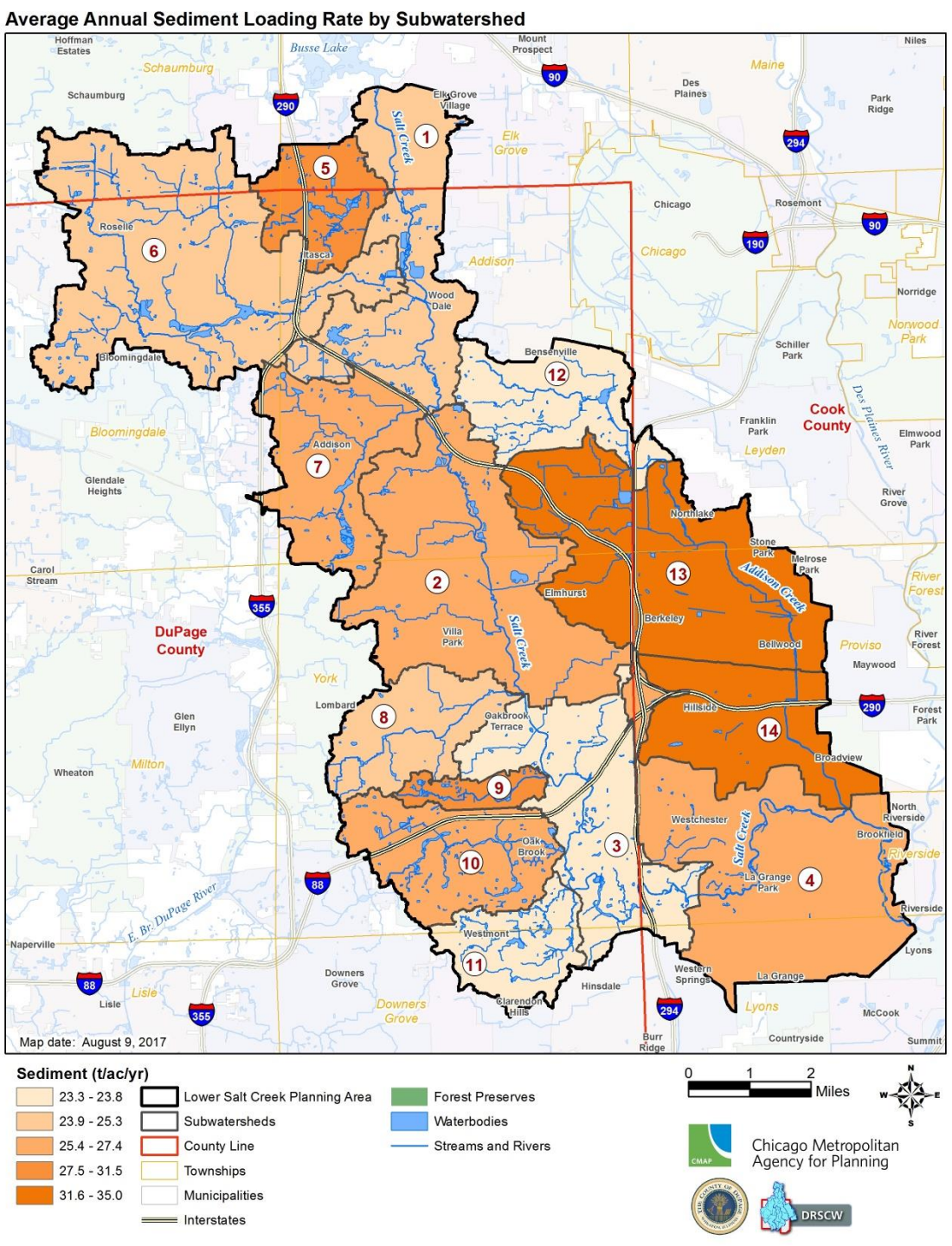
*Average Annual **Sediment** Load (tons/yr) by Subwatershed*



STEPL

Average Annual ***Sediment*** *Loading Rate by Subwatershed*

- Highest Rates:
  - SW#13: Addison Creek Central
  - SW#14: Addison Creek South
  - SW#5: Devon Ave Tributary



Land Use Category	*Salt Creek North*	*Salt Creek Central*	*Salt Creek South*	*Salt Creek Southeast*	*Devon Ave Trib.*	*Spring Brook Creek*	*Westwood Creek*
Subwatershed Unit #	1	2	3	4	5	6	7
Residential	1,659	3,911	1,598	3,162	692	3,623	1,186
Commercial	183	404	625	317	256	400	223
Institutional	182	220	307	505	68	334	195
Industrial	380	480	31	114	168	903	793
Open Space	1,225	712	1,393	1,898	66	1,950	431
Agriculture	6						23
T/C/U	1,086	2,073	975	1,906	657	2,019	810
Vacant	188	108	114	85	112	210	137
Under Construction		1	4	0	0	4	1
Unclassifiable/other	0	0		0	0	0	
Water	1	0		7		0	
Totals	**4,911**	**7,911**	**5,046**	**7,995**	**2,020**	**9,443**	**3,798**

Land Use Category	*Sugar Creek*	*Oak Brook Tributary*	*Ginger Creek*	*Bronswood Tributary*	*Addison Creek North*	*Addison Creek Central*	*Addison Creek South*
Subwatershed Unit #	8	9	10	11	12	13	14
Residential	1,357	221	1,570	862	1,072	2,458	1,121
Commercial	214	291	585	271	67	454	238
Institutional	279	15	111	100	148	540	730
Industrial	26			58	257	1,205	503
Open Space	204	21	462	396	810	299	70
Agriculture					1		
T/C/U	472	116	660	319	616	2,675	997
Vacant	56	98	44	82	59	55	19
Under Construction	0		1	0		1	1
Unclassifiable/other		0	1		1	7	3
Water		0			0	4	6
Totals	**2,608**	**762**	**3,434**	**2,088**	**3,031**	**7,697**	**3,688**

Problem Statement and Goals, *updated*

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Draft LSC Problem Statement

- Surface waterbodies are impacted by a variety of nonpoint sources of pollution. Within the Lower Salt Creek Watershed Planning Area, data indicates that Salt, Addison, Spring Brook, and Meacham Creeks and Swan Lake fail to meet certain water quality standards and thus do not attain all of their designated uses due to known and unknown causes of pollution that are often related to land use. Best management practices, programs, and policies must be identified and implemented by landowners and managers as resources allow to improve water quality and to restore designated use attainment. A plan will be completed that outlines protective actions to address nonpoint source pollution and guide remedial activities during the following ten years.

Draft Goals – revised

- Improve and protect the ecological integrity of surface water resources to attain or maintain designated uses of aquatic life support, fish consumption, primary contact, and aesthetic quality.

- Protect, restore, and expand [natural areas] [open space] and increase native [aquatic] species diversity [both terrestrial and aquatic plants and animals].

  Management Objective:

  - Maintain high quality riparian ecosystems by improving degraded and marginal areas

Draft Goals – revised

- Reduce flooding and attendant bank erosion and infrastructure risk through initiatives to improve and protect water quality.

  Management objectives:

  - Establish landowner incentives (e.g., cost-share program) to establish and maintain riparian buffers
  - Adopt a watershed-wide green infrastructure plan
  - Encourage construction of green infrastructure BMPs at community [neighborhood] and site scales

- Continue to build, strengthen, and support local partnerships and expertise to protect our streams and lakes via plan implementation.

Draft Goals – revised

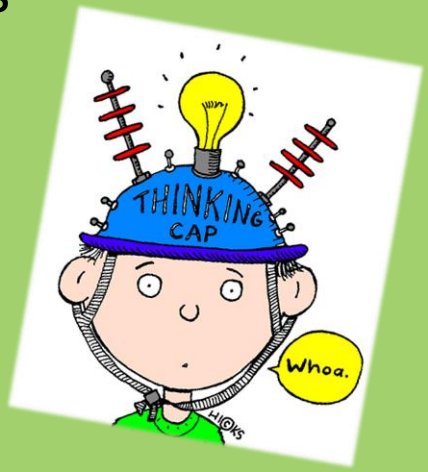
- Continue to raise public awareness and increase understanding of the impacts of land use and land/water management decisions on water and habitat quality, and further encourage implementation of watershed protection practices.

- Others…?

Next Steps

- Refinements to statement, goals

- Under each goal:
  - Management objectives / strategies / actionable items
  - Indicators / criteria for measuring progress



Potential Nonpoint Source Pollution Control BMP Projects

for inclusion in the Lower Salt Creek Watershed-based Plan

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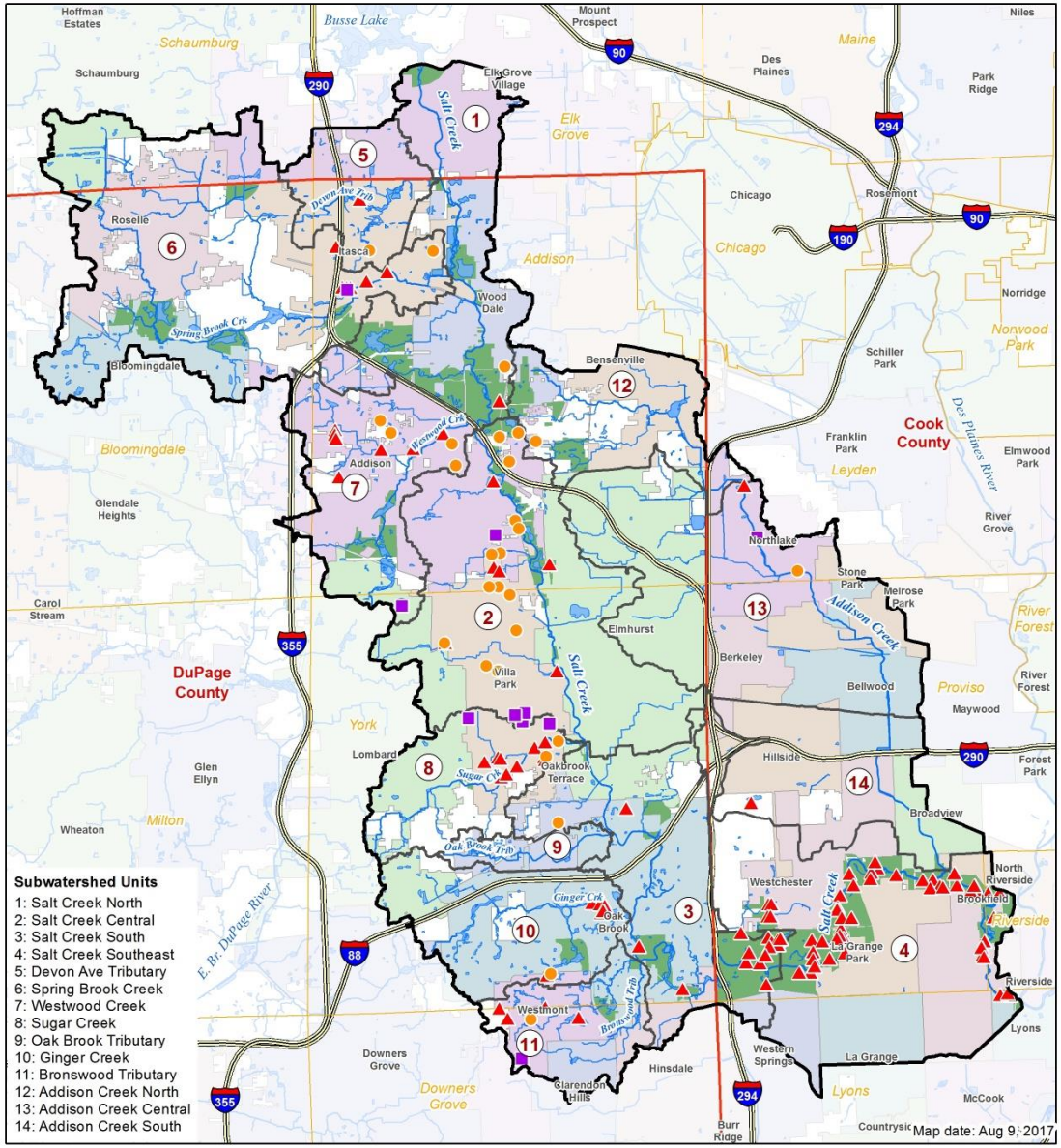
BMPs Identified

- Participants: 22
- BMPs Identified:
  - Opportunities: 112
  - Underway: 11
  - Completed: 30



Lower Salt Creek BMPs Identified (August 7, 2017)

BMP Opportunity
BMP Underway
BMP Completed
Lower Salt Creek Planning Area
Subwatersheds
County Line
Townships
Municipalities
Waterbodies
Streams and Rivers
Forest Preserves

0 1 2 Miles

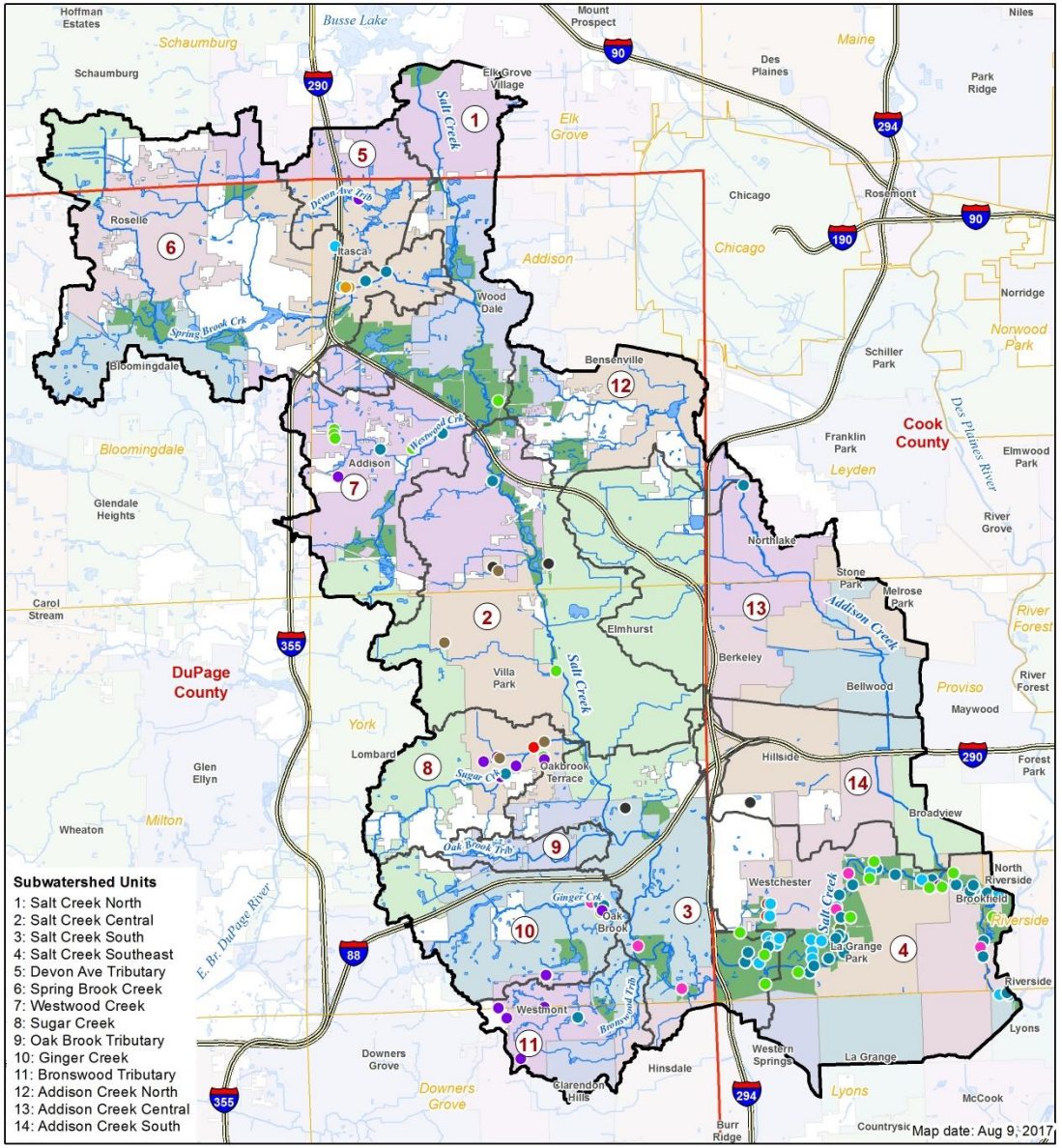
Chicago Metropolitan Agency for Planning

DRSCW

BMPs Identified

BMPs Identified by Municipality

Municipality	*Opportunity*	*Underway*
Addison	9	1
Brookfield	9	
Elmhurst	1	
Itasca	8	1
La Grange Park	8	
Lombard		1
Lyons	3	
Northlake	1	1
Oak Brook	10	
Villa Park	14	6
Westchester	8	
Westmont	6	1
Total	**77**	**11**



Lower Salt Creek BMPs Identified by Type (August 7, 2017)

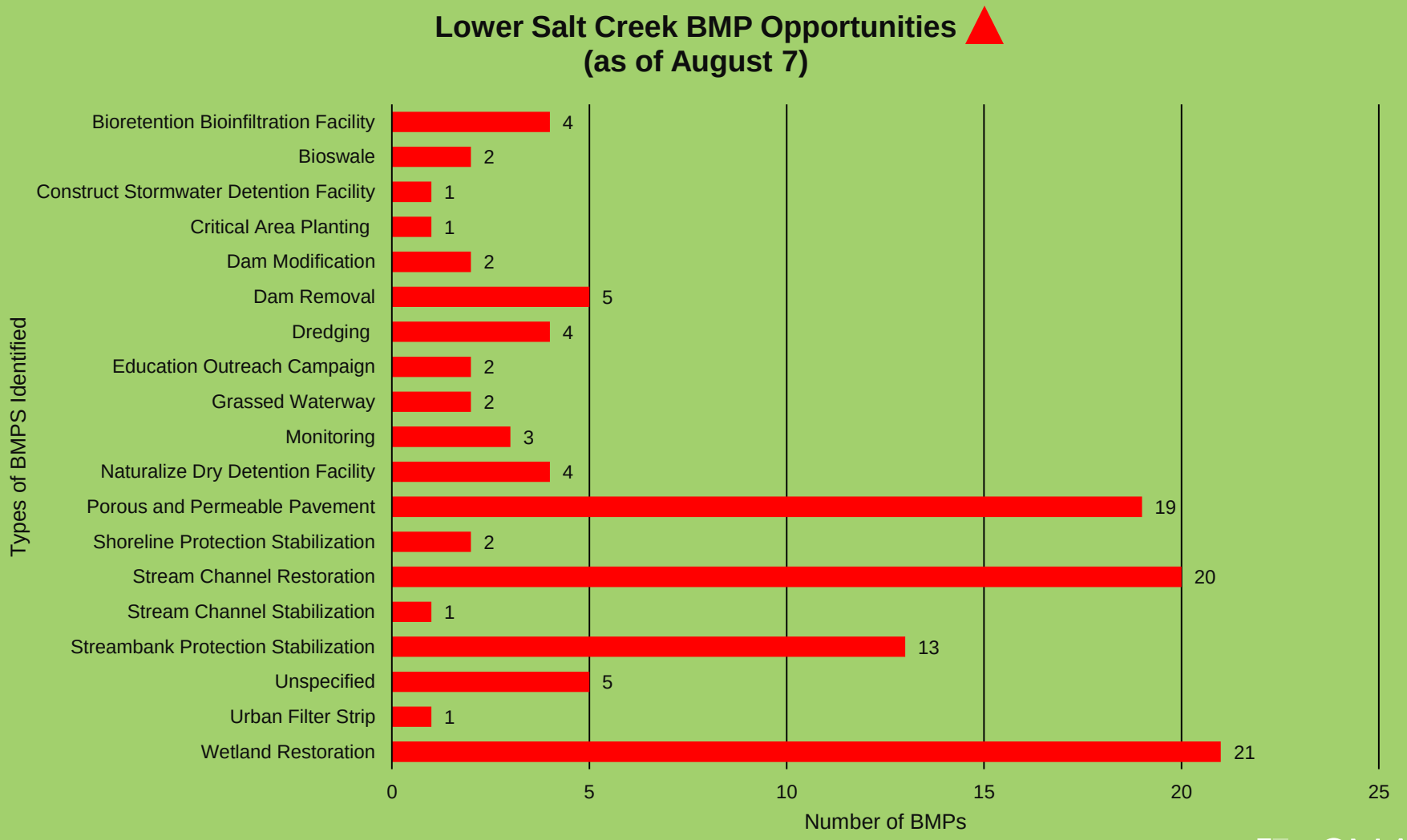
- Retention / Detention / Infiltration Facilities
- Critical Area Planting
- Dam Modification or Removal
- Dredging
- Education Outreach Campaign
- Monitoring
- Porous and Permeable Pavement
- Channel/Shoreline/Streambank Improvements
- Unspecified
- Wetland Restoration

0 1 2 Miles

Chicago Metropolitan Agency for Planning

DRSCW

Online submittals via BMP Identification Survey



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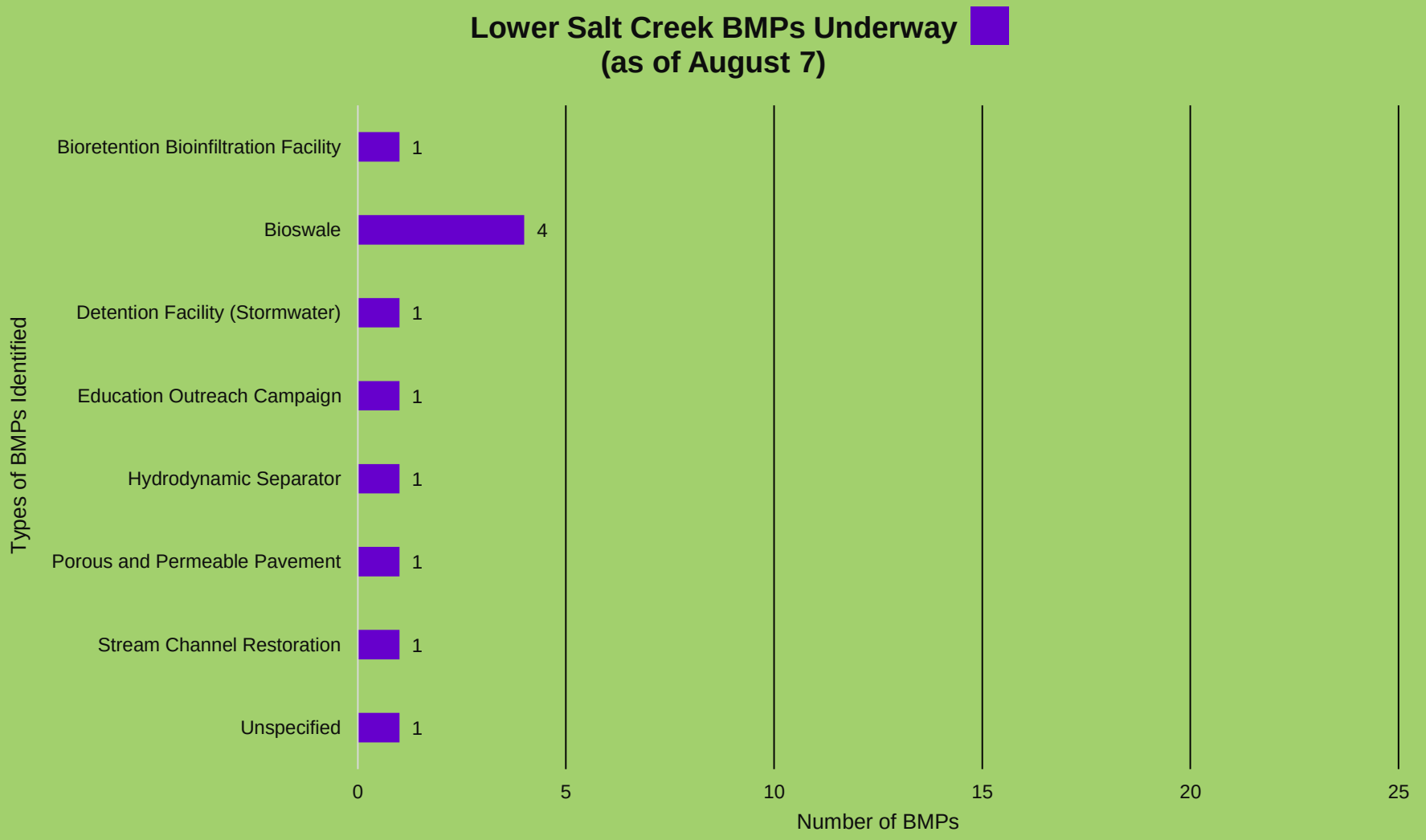
Online submittals via BMP Identification Survey



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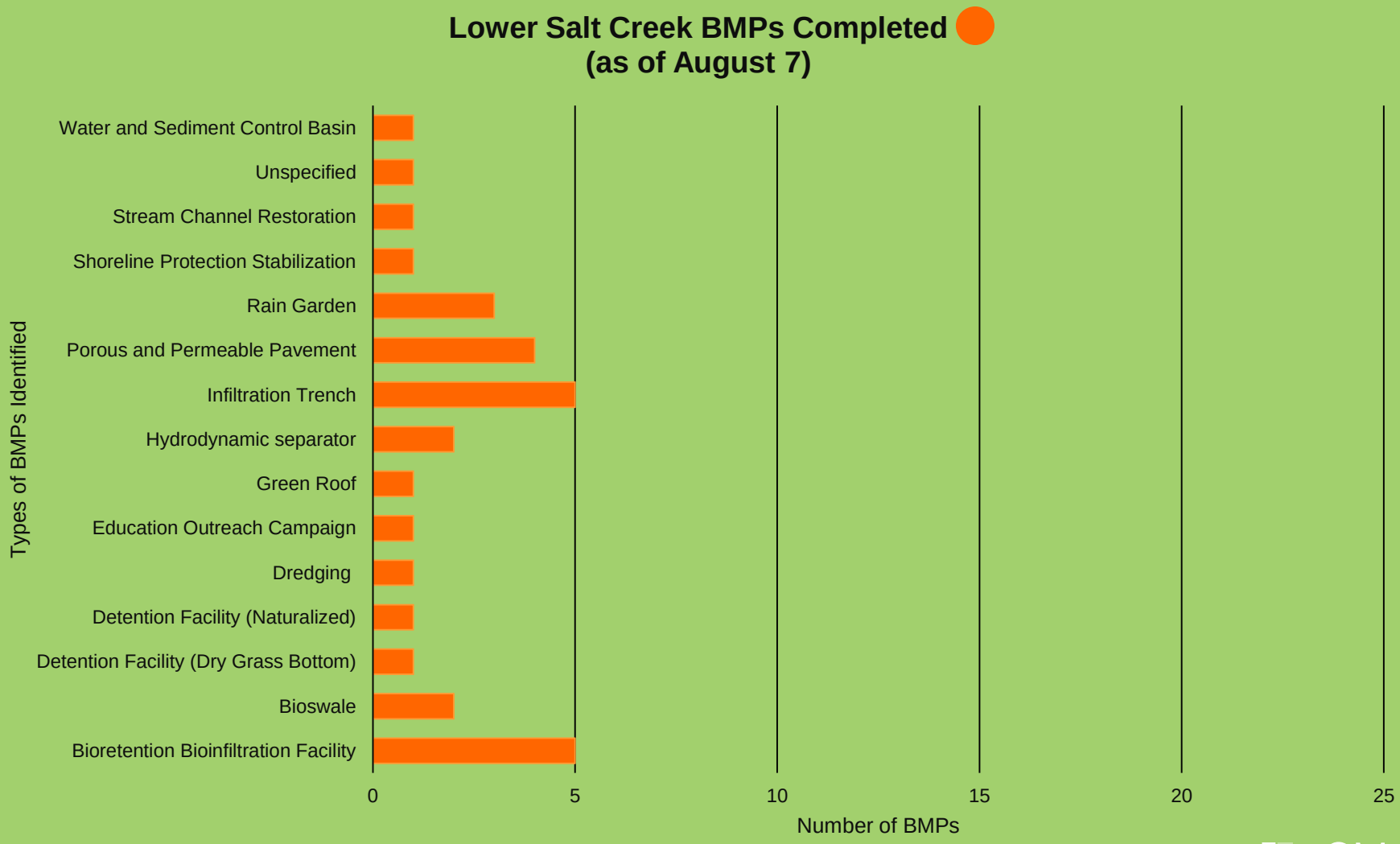
Online submittals via BMP Identification Survey



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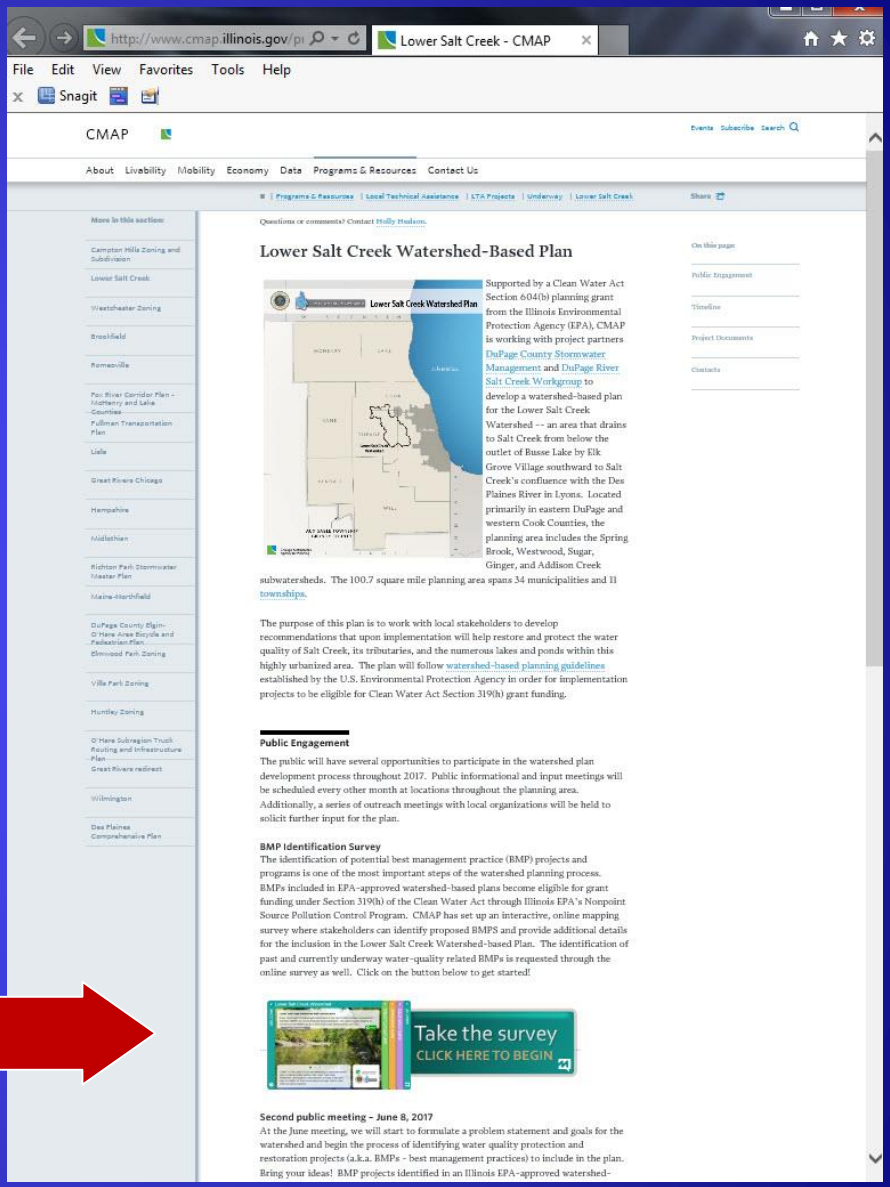
Lower Salt Creek BMP Identification Survey

Access via button on LSC page on CMAP website:

http://www.cmap.illinois.gov/programs-and-resources/lta/lower-salt-creek



or

https://LowerSaltCreek-BMPsurvey.metroquest.com

Planning & Policy recommendations

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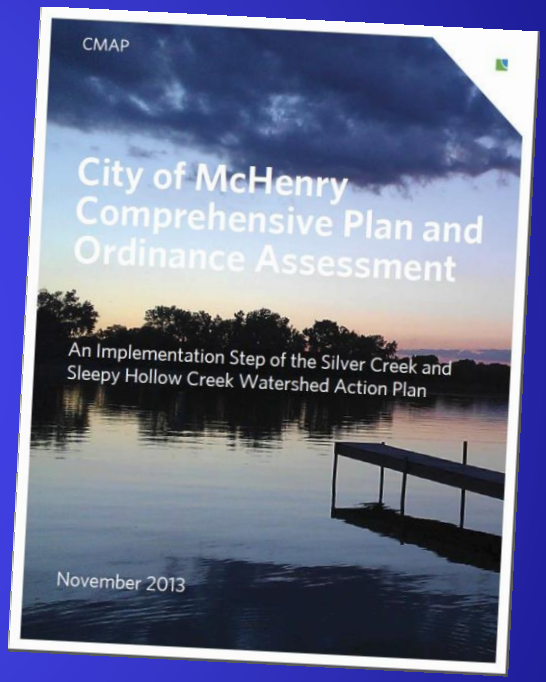
Tools for Protecting Watersheds

Center for Watershed Protection

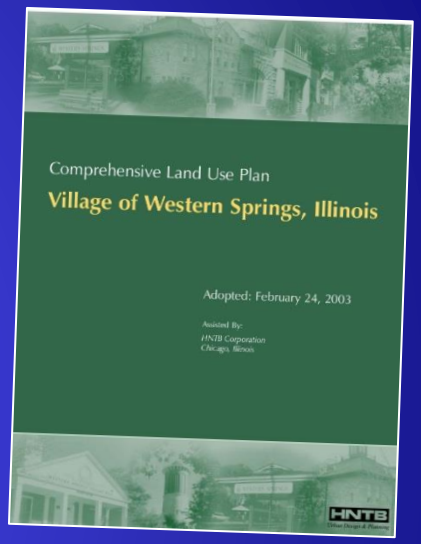
Plan and Ordinance Review

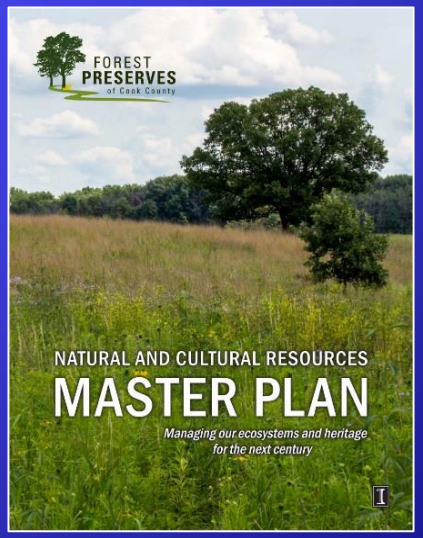
- Review of existing plans and ordinances in watershed
- County and municipal level
- Identify gaps and opportunities
- Create recommendations for future plans and ordinances



CMAP Review of Plans

- Comprehensive Plans
- Open Space Plans
- Green Infrastructure Plans
- Greenways and Trails Plans
- Bike/Active Transportation Plans
- Natural Resource Management Plans





Comprehensive Plan Review

*for comprehensive plan assessment, created checklist bases on U.S. EPA's Water Quality Scorecard**

- Natural Resources – identifying & mapping resource areas
- Water Resources – identifying, mapping, & protecting
- Open Space – for preservation & stormwater management
- Trees – preservation & planting
- Development and Land Use – compact development, infill, design
- Transportation/Parking – Alternative modes & imperviousness

https://www.epa.gov/smartgrowth/water-quality-scorecard

Comprehensive Plan Findings

- Most municipalities have a comprehensive plan
- Neither county has a comprehensive plan
- Several comprehensive plans require an update (>10 yrs old)

Natural Resources:

- Most identify critical natural resource areas and call for their preservation

Water Resources:

- ~50/50 on having WQ protection element, with goals for waterbodies and wetlands
- None address GW protection measures

Open Space:

- Majority identify open space, but less than half recognize its role in sustainable SW management

Comprehensive Plan Findings *cont.*

Trees:

- Most don't incl. tree preservation & replacement as community goals

Development:

- Most do not ID potential brownfield and grayfield sites and support their redevelopment
- Most do allow or encourage mixed-use and transit-oriented development and identify appropriate areas

Transportation/Parking:

- Most emphasize alternative modes of transportation, and recommend improvements to walking/biking conditions
- Most do not include or recommend a formal bike/ped plan
- Few promote GI practices in street design

Comprehensive Plan Findings *cont.*

Some Highlights … Can serve as examples for other comprehensive and local plans:

- Emphasize infill development & redevelopment to help limit development in new areas: Addison, Berkeley, Downers Grove, Franklin Park, Maywood, Northlake, Schaumburg, Westchester
- Emphasize sustainable development using natural resource management/best practices lens: Downers Grove, Elmhurst, Franklin Park, Itasca, Lombard, Northlake, Melrose Park, Schaumburg, Westchester, Westmont
- Promote the use of green infrastructure: Addison, Bensenville, Berkeley, Bloomingdale, Brookfield, Downers Grove, Elmhurst, Franklin Park, Lyons, Maywood, Melrose Park, Roselle, Westchester, Westmont

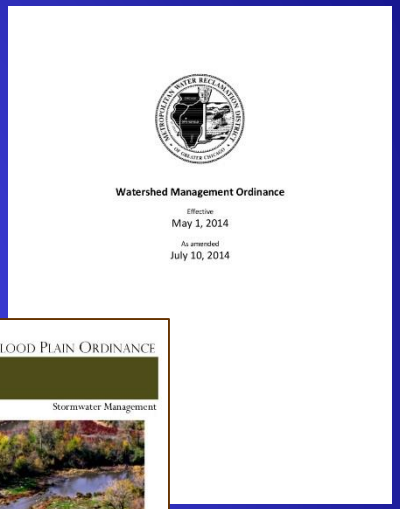
Planning Recommendations

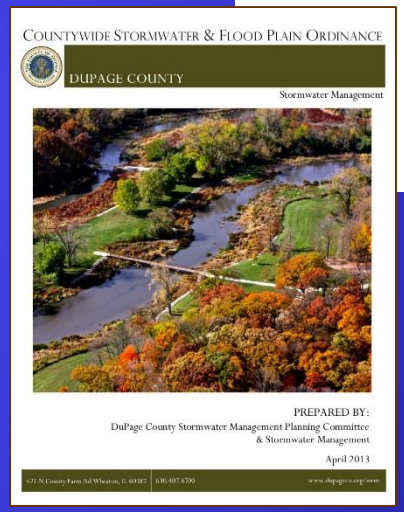
- Develop Comprehensive Plan: 5 munis and both counties
- Update older Comprehensive Plans: 11 munis
- Update or amend Comprehensive Plans to include recommendations for/to:
  - Natural resource management: Bellwood, Bloomingdale, Broadview, Brookfield, LaGrange Park, Oakbrook Terrace
  - Transit-oriented development: Bloomingdale, LaGrange Park
  - Walking and biking as alt. transportation modes: Broadview
  - Groundwater protection: all munis
- Develop stormwater management plan: DuPage Co.
- Develop natural resources management plan: FPD of DuPage Co.

Local Review of Development Rules

Ordinances, Codes, Guidelines…

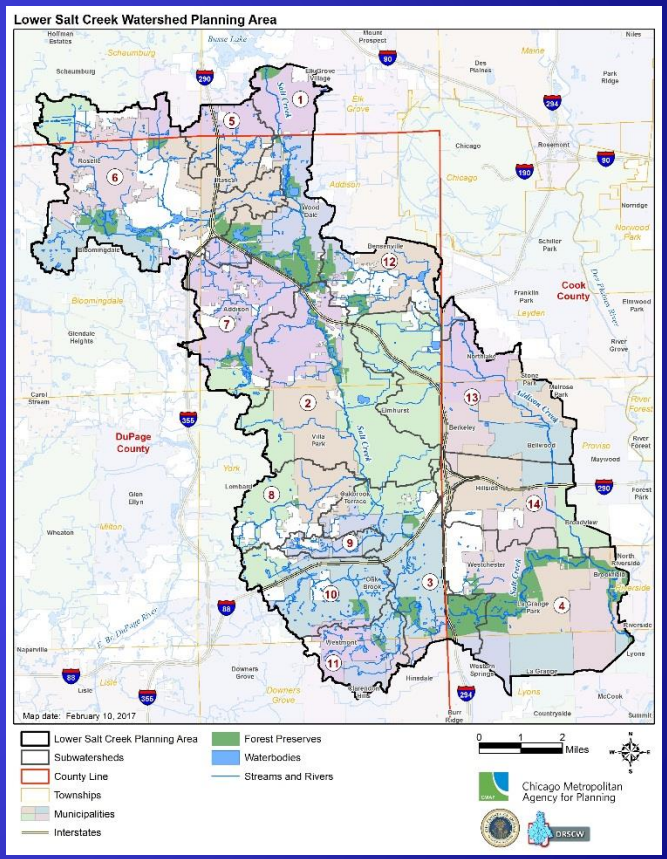
- Stormwater Ordinances
- Zoning Ordinances
- Subdivision Ordinances
- Parking Ordinances
- Landscaping Ordinances
- Water Conservation Ordinances
- Others …
  - Housing Infill, Health & Safety, Environment …





Ordinance Questionairre

- Stormwater Drainage & Detention
- Soil Erosion & Sediment Control
- Floodplain Management
- Stream & Wetland Protection
- Natural Areas & Open Space
- Conservation Design & Infill
- Landscaping
- Transportation & Parking
- Water Efficiency & Conservation
- Pollution Prevention



Ordinance Questionairre

Lower Salt Creek Watershed Planning

Name of County or Municipality:		Contact information of respondents (names, phone #s, emails):	

Ordinance Questionairre

Does the ordinance.....

Stormwater Drainage & Detention	Code and standard category	Checklist question	Yes/No or Mostly/Minimally Addressed	Code section	Current standard text (optional)	Notes
1	Purpose	Include control of runoff rate, volumes, and quality in the purpose statement?				
2	Minimize stormwater quantity	Encourage the use of permeable paving, greenroofs, and similar practices that reduce the quantity of runoff that must be handled with innovative or conventional drainage practices?				
3	Natural drainage practices	Encourage/require the use of natural drainage practices (e.g., swales, filter strips, bio-infiltration devices, and natural depressions over storm sewers) to minimize runoff volumes and enhance pollutant filtering?				
4	Detention credits	Provide detention credit for practices, such as permeable paving or bio-infiltration, that provide temporary storage of runoff in the sub-surface void spaces of stone or gravel?				
5	Peak discharge	Require that peak post-development discharge from events less than or equal to the two-year, 24-hour event be limited to 0.04 cfs per acre of watershed?				
6	Detention design	Require detention design standards that maximize water quality mitigation benefits, with a requirement for "naturalized" wet bottom and/or wetland basins over dry basins?				
7	Water quality performance standards	Require conformance to numerical water quality performance standards (such as percent removal of sediment or phosphorus)?				
8	Floodway and stream detention restrictions	Prohibit detention in the floodway and on-stream detention, unless it provides a regional stormwater storage benefit (e.g., for upstream properties and/or multiple sites) and is accompanied by other upstream water quality BMPs, such as bio-infiltration?				
9	Stormwater discharge	Prohibit the direct discharge of undetained stormwater into wetlands?				
10	Maintenance	Require formal maintenance plans and contracts for the long-term maintenance and vegetative management of all new detention facilities?				
Soil Erosion & Sediment Control	**Code and standard category**	**Checklist question**	**Yes/No or Mostly/Minimally Addressed**	**Code section**	**Current standard text (optional)**	**Notes**
1	Limiting sediment delivery	Include a comprehensive purpose statement which limits sediment delivery, as close as practicable, to pre-disturbance levels and minimizes effects on water quality, flooding, and nuisances?				
2	Minimize sediment transport	Include a comprehensive set of principles that minimize sediment transport from the site for all storms up to the ten-year frequency event? (These principles should include provisions to minimize the area disturbed and the time of disturbance; follow natural contours; avoid sensitive areas; require that sediment control measures be in place as part of land development process before significant grading or disturbance is allowed; and require the early implementation of soil stabilization measures on disturbed areas.)				
3	Ordinance applicability - size	Require ordinance applicability for any land disturbing activity in excess of 5,000 square feet?				

Public Information & Education component

Information/Education/Outreach activities should support each of the watershed management goals

- Target audiences?
- Message delivery formats?
- Existing programs?
- New ideas?

Next Steps with Watershed Protection Measures

- Site-specific BMPs: online survey – next cut off Sept. 1
  - Pollutant load reduction estimates (TP, TN, TSS, BOD)
  - Cost estimates
- Ordinance Questionairre
- I & E component

Call for Photos

See handout…

- within LSC Watershed planning area
- variety of subject areas
- JPG format accompanied by information for each photo:
  - Subject
  - Location
  - Year and Month photo taken
  - Photographer's name/affiliation

Next Meetings

Thursdays, 1:00 p.m. - *Please offer to host!*

Aug. 10

- BMPs submitted, Planning & Policy recommendations, Information & Education component

Oct. 5

- Implementation Schedule
- Interim Measurable Milestones
- Criteria for Determining Success
- Monitoring component

Dec. 7

- Final draft plan review

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Local Watershed Activities, News, Announcements

photo by Renee Kohl, Villa Park June 2017 Photo Contest Winner
http://www.invillapark.com/

CMAP

Questions and Comments

Holly Hudson
Aquatic Biologist
LSC Project Manager
(312) 386-8700
hhudson@cmap.illinois.gov

Kelsey Pudlock
Water Resource Planner
(312) 386-8712
kpudlock@cmap.illinois.gov

Chicago Metropolitan Agency for Planning
233 S. Wacker Drive, Suite 800
Chicago, IL 60606
www.cmap.illinois.gov